

U.S. DEPARTMENT OF AGRICULTURE  
NATURAL RESOURCES CONSERVATION SERVICE  
SOUTH DAKOTA

**OPERATION AND MAINTENANCE PLAN  
COMPOSTING FACILITY  
CODE 317**

Landowner/Operator \_\_\_\_\_

Job Location \_\_\_\_\_ GPS \_\_\_\_\_

Prepared By \_\_\_\_\_ Date \_\_\_\_\_

**Operation and Maintenance Items**

Operation and maintenance (O&M) is necessary for all conservation practices and is required for all practices installed with NRCS assistance. The landuser is responsible for proper O&M throughout the life of the practice and as may be required by Federal, state or local laws or regulations.

Operation refers to operation of the practice in compliance with all laws, regulations, ordinances, and easements; and in such a manner that will result in the least adverse impact on the environment and will permit the practice to serve the purpose for which it was installed. Maintenance includes work to prevent deterioration of the practice, repairing damage, or replacing components which fail.

Necessary operation and maintenance items for this practice include:

**OPERATION**

**Temperature.** Operating temperature of the composting material should be 131°F to 170°F once the process has begun. Operating temperature should be reached in about 7 days and remain elevated for up to 14 days. The pile should remain at or above 110°F for the remainder of the designated composting period.

If temperature falls significantly during the composting period, odors develop, or if material does not reach operating temperature, investigate piles for moisture content, porosity, and thoroughness of mixing. Compost managed at the required temperatures will favor destruction of pathogens, plant diseases and weed seeds.

**Aeration.** Heat generated by the process causes piles to dehydrate. As the process proceeds, material consolidates, and the volume of voids decreases, restricting air flow. Select materials for the composting mix that will insure adequate air movement throughout the composting process. Periodically turning the pile and maintaining proper moisture levels for windrows and static piles will normally provide adequate aeration.

**Pathogens.** Composting of dead animal carcasses and animal parts should include strict temperature monitoring to insure pathogens are destroyed. For active piles, the temperature must be maintained at 131°F or higher for 3 consecutive days to achieve pathogen reduction. For aerated windrows, the temperature must be maintained at 131°F or higher for at least 15 consecutive days and the windrow must be turned at least 5 times during the high temperature period.

**Vectors.** Flies, rats and birds may be attracted to raw compost feedstocks. Mosquitoes may reproduce where standing water is present. To minimize vector problems, reduce exposed feedstock storage, turn piles frequently, eliminate standing water and keep the area clean.

**Nutrients.** Keep compost well aerated to minimize nitrogen loss by denitrification. Keep pH at neutral or slightly lower to avoid nitrogen loss by ammonification. High amounts of available carbon will aid nitrogen immobilization.

Include compost nutrients in nutrient management plans. Prevent loss of nutrients and pollutants to surface and ground water.

**Testing Needs.** Test compost material for carbon, nitrogen, moisture, and pH if compost fails to reach desired temperature or if odor problems develop. The finished compost material should be periodically tested for constituents that could cause plant phytotoxicity as the result of application to crops. Compost made from dead animals or animal parts should be tested for indicator pathogens such as E.coli and salmonella. Composted materials that are prepared for the retail market require testing for labeling purposes.

## MAINTENANCE

- ☐ Do not allow any equipment that exceeds design load limits on or within twenty feet of the structure.
- ☐ Poison gasses are often heavier than air and may be trapped in closed waste storage structures. Do not allow human entry into any closed structure without safety equipment, including ladders and breathing apparatus. Maintain all lids, grates and shields on openings to underground or enclosed structures.
- ☐ Maintain all electrical and mechanical equipment in good operating condition by following electrical codes and manufacturers recommendations. Inspect and repair grounding rods, switches, and wiring.
- ☐ Fences, railings, and/or warning signs must be maintained to provide warning and prevent unauthorized entry.
- ☐ Repair any vandalism, vehicular or animal damage. Inspect and maintain runoff control structures.

Other

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